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15 Claims

1. Axial piston drive with a continuously adjustable piston stroke, comprising a drive shaft (10, 12) on which a swash plate (16) is supported in a crank chamber (14) in such a way as to be tiltable and displaceable in the axial direction, and with a controller (18, 20) by means of which an tilt angle and an axial position of the swash plate (16) can be adjusted, and with at least one piston (26, 28) connected to the swash plate (16) so that it can be actuated to move within a cylinder (22, 24), characterized in that the controller (18, 20) incorporates an adjustment unit (30, 32) separated from the piston (26, 28).

2. Axial piston drive according to Claim 1, characterized in that the adjustment unit (30, 32) is driven hydraulically.

3. Axial piston drive according to Claim 2, characterized in that the adjustment unit (30, 32) is supplied with compressed oil by a hydraulic unit that is independent of the medium being propelled by the piston (26, 28).

4. Axial piston drive according to Claim 2, characterized in that the hydraulic adjustment unit (30, 32) is supplied with compressed oil by an oil separator (34) disposed downstream of the cylinder (22, 24).

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5. Axial piston drive according to Claim 4, characterized in that the adjustment unit (30, 32) is connected to the crank chamber (14) by way of a drain (36), and a influx (38) from the oil separator (34) to the adjustment unit (30, 32) or the drain (36) from the adjustment unit (30, 32) to the crank chamber (14) can be controlled.

6. Axial piston drive according to Claim 5, characterized in that in the oil separator (34) and/or in the crank chamber (14) at least part of an oil-level controller (40) is disposed which, when a specified oil level in the oil separator (34) is exceeded and/or when the oil in the crank chamber (14) falls below a certain level, connects the oil separator (34) to the crank chamber (14) by way of a channel (42).

7. Axial piston drive according to Claim 5, characterized in that in the oil separator and an amount of oil that is present are matched to one another in such a way that before an oil deficiency appears in the crank chamber (14), the oil separator overflows and the overflowing oil flows back into the crank chamber (14).

8. Axial piston drive according to Claim 4, characterized in that in the adjustment unit (30, 32) is connected to the crank chamber (14) by way of a drain (36), and a influx (38) from the oil separator (34) to the adjustment unit (30, 32) and the drain (36) from the adjustment unit (30, 32) to the crank chamber (14) can be controlled.

9. Axial piston drive according to one of the preceding claims, characterized in that the swash plate (16) is supported on a joint head (48, 50) that can be axially displaced by means of a setting piston (44, 46) of the adjustment unit (30, 32) and the swash plate (16) is connected by an off-centre joint (52) to a component (54) that is fixed in the axial direction.

10. Axial piston drive according to Claim 9, characterized in that in the setting piston (44) and the joint head (48) are constructed in one piece.

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